

ABSTRACT

A DSL system includes a multiple loop segment where K loops are bonded to provide a multiple loop segment having up to (2K-1) communication channels on which transmissions are vectored. The segment may be a drop to a customer premises, an inter-peDESTAL link, or any other suitable part of a larger DSL system. Generally the bonded loops are relatively short, being 300 meters or less. Signal vectoring is used to increase the speed and data carrying capability of the channels. In some embodiments, an expanded frequency spectrum also can be used to increase the data carrying capability of one or more of the channels. An impedance matching circuit may be coupled to each end of the segment to provided efficient transmission of data across the segment. A controller may provide control signals used to operate the segment as a vectored system and, if desired, frequency bandwidth control signals. The controller may monitor and/or collect data and information from the DSL system to assist in generating control signals. The controller can be a dynamic spectrum manager or DSM Center that includes a computer system and/or other hardware to assist in performing the required functions.